The European Union of Medical Specialties core training curriculum in infectious diseases: overview of national systems and distribution of specialists

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ABSTRACT

The European Union of Medical Specialities (UEMS) Section of Infectious Diseases agreed on an infectious disease training programme in 1999, which was updated in 2002. Although the provision of infection services throughout Europe is not uniform, with variation in the roles of infectious disease physicians and microbiologists, there are, nonetheles, physicians with a predominant responsibility for clinical infectious diseases (and tropical medicine) in most countries. However, infectious diseases is formally recognised as a specific discipline by most, but not yet all, European countries. There has been consensus from national representatives to the UEMS on the content of the published curriculum. There are clear areas of overlap in training between different infection disciplines, and exploration of possible areas for closer liaison and collaboration between them has been initiated. The increased movement of medical staff within Europe will place greater demands on those responsible for training, monitoring and quality assurance. The Board and Section of Infectious Diseases have established core training programmes with a generic logbook to assist those countries without a written curriculum or record book and facilitate the development of common standards of training. The duration of training varies across Europe; 4 years is the UEMS standard, or longer if the training is combined with general internal medicine. The numbers of infection specialists (infectious diseases and microbiology) per million population show considerable variation. The UEMS Sections have recognised the importance of working closely with European specialist societies involved with training. The Section for Infectious Diseases has, in partnership with the ESCMID, established a Board for the accreditation of continuing medical education/continuing professional development.

Keywords Curriculum, infectious diseases, infection specialists, training, UEMS

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INTRODUCTION

The broad similarity between delivery of care in different European countries by 'organ-based' specialists such as those working in cardiology, pneumonology, gastroenterology and endocrinology and the content of their training programmes will be self-evident. The development of new subspecialties such as hepatology will undoubtedly vary depending on a variety of factors, including the perceived demand for these specialties, which is likely to vary.

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In the first half of the 20th century and before, much of what would be regarded as 'general medicine' had an infectious component. The infectious disease specialist was busy caring for patients with smallpox, diphtheria, poliomyelitis, gastroenteritis, etc. However, with the control of classic infectious diseases, usually managed in fever hospitals, the development of 'infectious diseases' as a specialty differed between countries; in some countries, the specialty was embraced by teaching centres and developed a strong and structured clinical base, whereas in others it failed to develop as an independent specialty. This failure was in part due to the false perception in the 1960s that infectious diseases had been controlled.

In 1958, the European Union of Medical Specialities (UEMS) was established for the purpose of harmonisation and improvement of the quality of

medical specialist practice in the European Union. When Sections were initially developed, there was no Section for Infectious Diseases at the European level because too few national authorities recognised the specialty.

However, with the passage of time there has been a growing recognition that infection issues represent challenges as great today as ever before. There are additionally increasing clinical demands in relation, for example, to 'new' diseases such as HIV/AIDS, hepatitis C, re-emerging infections such as tuberculosis, and travel-related infections. Travel has resulted in new and exotic infections, including severe acute respiratory syndrome and viral haemorrhagic fever in European countries, and alongside this is the potential threat of infections resulting from deliberate release of agents causing diseases such as smallpox and anthrax.

RECOGNITION OF INFECTIOUS DISEASES BY THE UEMS

During the 'quiet' years, many infections were managed by the interested clinician who may have developed a sub-speciality or by the laboratory-based specialist in microbiology in countries where this discipline had flourished. In the UK, for example, microbiologists responded by extending their training to include a more clinical orientation, with active involvement in many hospitals in infection issues in the intensive care unit, as well as taking responsibility for infection control. However, the extent to which the clinical involvement of microbiologists can develop is limited by the absence of an entry requirement for training in general internal medicine. Furthermore, complex problems concerning infection in haematology and transplant units challenge the infection service. In the UK, one approach has been to develop a joint training programme in infectious diseases and microbiology.

By the mid 1990s, there were sufficient member countries whose national authorities recognised infectious diseases for an application for recognition by the UEMS to be made:

1996: approval for Section for Infectious Diseases;
1997: Section for Infectious Diseases established as a Section within General Internal Medicine;
1998: Board for Infectious Diseases established;
1999: European training programme approved by the Section at the annual meeting in Geneva (on the UEMS web-site: http://www.uems.be/infec-tr.htm);
1999: logbook on web-site;
2002: updated training programme;
2004: Section for Infectious Diseases established its own web-site (http://www.uemsinfect.org).

The Board meets once or twice annually, and the Section meets annually in September.

THE UEMS TRAINING PROGRAMME FOR INFECTIOUS DISEASES

The UEMS has endeavoured to provide a framework for training against which different countries can compare their existing training programmes. For countries that have not yet established their own written training programme and logbook, it provides an example for their potential use. Most European countries which have a written curriculum have a training content similar to that written by the UEMS. There are, however, countries that do not yet have a written training programme or whose training programme has not been shared with the UEMS. There are currently limited data available to the UEMS on the situation in the new countries joining the European Union in 2004.

The UEMS has no statutory responsibility or ability to influence the number of training centres, the numbers of posts for trainees, or the quality of training; this is the responsibility of national authorities. The guidance on the duration of training has been accepted; there is a 2-year minimum of education in general internal medicine and a 4-year minimum of 'specialty training'.

Microbiology is part of the section of Medical Biopathology at the UEMS. A review of the curriculum of the two specialties of infectious diseases and microbiology shows a significant area of overlap. In the UK, this recognition resulted in the development of a joint training programme of infectious diseases and microbiology about 4 years ago. This was proposed and developed by the profession and has been enthusiastically embraced by trainees. Entry requirements include experience in general internal medicine (at least 2 years with the Member of the Royal College of Physicians examination). The exact role for these specialists has yet to be defined, but they should be able to function in

both specialist infectious disease units and district general hospitals. However, there is no higher specialty training in general internal medicine incorporated in this joint programme, which is 6 years in duration.

OVERVIEW OF NATIONAL SYSTEMS AND DISTRIBUTION OF SPECIALISTS

Most countries in Europe have national recognition of infectious diseases as an independent specific specialty, usually within general internal medicine. However, there are still some countries with limited recognition (France, in hospitals only; Germany, in three of 15 states with recommendation for recognition in all states by the Federal Chamber of Physicians) or no recognition (e.g., Spain, Belgium, Austria and Luxembourg).

The duration of infectious disease training outside Europe varies considerably. It may be as short as 2–3 years or 4 years, which is the UEMS standard. Within Europe, some variation remains, with most but not all countries training in infectious diseases as well as general internal medicine.

The ratio of specialists in infectious diseases and microbiology varies across Europe. For example, the ratio of infectious disease to microbiology specialists is about 1:4 in the UK (i.e., more microbiologists), whereas in Sweden it is 3:1 (i.e., more infectious disease specialists). This may be a consequence of the way in which infection disciplines developed in the 1960s.

It is tempting to suggest that the clinical need for infectious disease and microbiology specialists in different countries should be similar. A survey of the number of specialists was conducted by the UEMS Section for Infectious Diseases in 1999, and most data were updated in 2003–2004. The survey showed that the distribution of infectious disease specialists is far from uniform.

Of the 14 countries who responded to the question about the presence of tropical disease specialists, only the UK, Italy and The Netherlands indicated that they had such specialists.

Of the nine countries who responded to the question on paediatric infectious diseases, only four had paediatric infectious diseases as a specific discipline (the UK, Eire, Finland, The Netherlands).

The number of specialists in infectious diseases expressed as specialists per million population showed a wide variation, as is evident in Table 1. It is clear that there are substantial differences in specialist numbers across European countries. The discrepancies can occur in closely adjacent countries; for example within the UK, Scotland has about twice the number of specialists per million than England and Wales.

Considering the possibility that in countries with low levels of infectious disease specialists, a larger proportion of the 'infection' work may thus be dealt with by specialists in microbiology, in Table 2 the number of specialists in infectious diseases (adult and paediatric) and microbiology is included as a numerator. However, there remains a substantial difference between the numbers of these specialists across European countries. It must be acknowledged that there has been no provision of up-to-date data from all countries, but most have provided updated data in 2003–2004 through the UEMS country representatives.

Data for countries such as Germany, Belgium and Spain, which do not have national recognition of infectious diseases as a specialty, may not reflect the real numbers of infection specialists, as some doctors could act as infectious disease

Table 1. Numbers of infectious disease specialists (including adult and paediatric) per million population (no data available from countries not shown in the table)

Country	Approximate population (million)	Infectious disease specialists per million population
England, Wales and Northern Ireland	53.6	< 5
Belgium	10	< 5
Greece	10.3	< 5
Germany	82	< 5
Republic of Ireland	3.6	< 5
Scotland	5.1	< 5
The Netherlands	15.8	5–10
Denmark	5.3	5–10
Portugal	10	5–10
Finland	5.2	10–20
Norway	4.5	10–20
Slovakia	5.4	10–20
Slovenia	2	10–20
Switzerland	7.3	10–20
Iceland	0.3	20–40
Croatia	4.8	20–40
Sweden	8.8	20–40
Turkey	68	20–40
Italy	58	40–60

Table 2. Numbers of infection specialists (including adult and paediatric infectious diseases and microbiology) per million population

Country	Approximate population (million)	'Infection' specialists (infectious diseases + microbiology) per million population
England, Wales and Northern Ireland	53.6	5–10
Greece	10.3	5–10
Republic of Ireland	3.6	5–10
Belgium	10	10–20
Germany	82	10–20
The Netherlands	15.8	10–20
Scotland	5.1	10–20
Denmark	5.3	10–20
Portugal	10	10–20
Finland	5.2	20–40
Turkey	68	20–40
Slovakia	5.4	20–40
Iceland	0.3	40–60
Norway	4.5	40–60
Croatia	4.8	40–60
Sweden	8.8	40–60
Italy	58	40–60
Switzerland	7.3	No data
Slovenia	2	No data

specialists but are catagorised within another specialty such as pneumonology.

THE APPROPRIATE NUMBER FOR INFECTIOUS DISEASES SPECIALISTS

The data above do not provide guidance concerning the appropriate number for infectious disease specialists or 'infection' specialists, probably in part because of the differing job descriptions of infection specialists in different areas. For example, infectious disease physicians may differ in different countries in their clinical responsibility for diseases such as HIV/AIDS, chronic hepatitis (B and C) and tuberculosis, as well as in the provision of service; some provide holistic inpatient care, and others a consultant-based service. There is, though, no doubt as to the requirement for infection specialists, which has increased and is continuing to do so as a result of many factors, such as:

- expanding numbers of compromised hosts, including those with HIV/AIDS;
- increasing complexity of infections, including those in the intensive care unit;
- increasing demand for advice on prevention of travel-related illness;
- increasing necessity for anticipation of and response to new threats of natural disease (e.g., SARS);
- increasing necessity for anticipation of and response to infectious agents that may be deliberately released as an act of bioterrorism (e.g., those causing small pox and anthrax).

The national authorities responsible for the recognition of the specialty of infectious diseases and the number of training posts are almost universally the national governments. Governments are notoriously slow in responding to medical need but, perhaps due to an awareness of the above and other issues, there has been an increase in training posts within the UK for both infectious diseases/general internal medicine and infectious diseases/microbiology. Additionally, over ten new consultant posts in infectious diseases were created in 2003, and 7 for 2004. Also, in Sweden the number of training posts in infectious diseases has increased over the past 5 years from approximately 40 to 100 positions. There is a concern among the specialist body that the number of trainees completing training will not be sufficient to match the expansion in specialist posts. This illustrates the importance of a long-term view of demand in relation to training and reinforces the need for formal recognition of the specialty of infectious diseases by national governments, so training programmes and training posts can be planned in an effective manner. Part of the drive for new specialist posts in the UK may be the desire to develop a more structured national network for infectious diseases, with infection centres that are multidisciplinary, encompassing service, training, teaching and research. The development of infection centres was one of the recommendations of a House of Lords Science and Technology Select Committee report in July 2003 (core disciplines of infectious diseases (adult and paediatric), microbiology, virology and public health in a university hospital). Such a centre could network effectively with the infection teams at adjacent district general hospitals. Such a design would provide an invaluable national infrastructure for infection control, and would facilitate optimum training and research, as well as closer collaboration among the individual infection disciplines.

CONCLUSION

The UEMS Sections have recognised the importance of working closely with those European specialist societies involved with training and the development of the discipline. Such a partnership will help the development of the discipline and should facilitate working towards curriculum-based competencies that are consistant among countries and appropriate to clinical needs. The opinions on joint training in Europe are diverse, and there are currently varying levels of collaboration between the different infection disciplines. However, it is increasingly recognised that treatment of infection will be stronger as a whole if there is closer liaison among those who are involved from the different disciplines. The increased movement of medical staff within the European Union will place greater demands on those responsible for training, monitoring and quality assurance. In the UK and Ireland, the responsibility currently lies with the Royal College of Physicians Joint Committee for Higher Medical Training, but a new government-established training board was estabilished in 2004 to oversee postgraduate training in the UK. In some countries, it is the responsibility of the ministry or board of health, with or without a specialist society input, and in other countries it appears to be predominantly the responsibility of the national medical society, probably with involvement of the national specialist societies.

There is little doubt that there will be major new challenges to national authorities with regard to movement of specialists between European countries. The basic reason for the establishment of the UEMS was to ensure consistency in training, which, in the context of the new legislation, is extremely important. Whereas some Sections have been established for decades, the Section of Infectious Diseases is relatively new; however, it has established a framework against which training programmes can be compared.

Note

The data included in this article are believed to be accurate. However, the sources of data from different countries are not uniform, and most but not all countries have provided updated information. A copy of these tables was sent to the UEMS delegates from each member country to provide an opportunity for correction, and I am grateful to those who replied, who were the majority.